OVERVIEW OF PILL REMINDER

ASSEMBLY INSTRUCTIONS

Read this document before proceeding to purchase parts and assemble your Pill Reminder

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Date: 5/13/14

1.   OVERVIEW.

The Pill Reminder is assembled out of parts that are specified in the document "Pill Reminder Parts List" that can be found in the "Documents" folder of this release package. The sub-folder called "Assembly Instructions" contains a number of documents, each document providing details of a major step in the assembly of the Pill Reminder. The documents in this "Assembly Instructions" sub-folder are as follows:

- **Pill Reminder Arduino IDE Installation**: These instructions are needed to load the Pill reminder software into the Arduino Uno board that is part of the Pill Reminder electronics. Installing the Arduino IDE on your computer will also let you modify the open source Pill Reminder software if you so chose.

- **Pill Reminder Shield Board Assembly Instructions**. The shield board is a printed circuit board that you must assemble out of parts specified in the Parts List. Once assembled, the shield board plugs into the Arduino Uno board to form the bulk of the Pill Reminder's electronics. This document contains step by step instructions for assembling the shield board.

- **Pill Reminder Case Assembly Guide:** This document provides step by step instructions for assembling the Pill Reminder enclosure out of pre-made parts that you can obtain from the Parts List. It also contains some instructions about making your own parts using the CAD files supplied in the folder "Hardware | Enclosure CAD Files" out of raw wood or plastic material and a laser cutter, should you desire to do so.

- **Pill Reminder Final Assembly Instructions**: This document contains the step by step instructions for completing and testing the Pill Reminder. You must first perform the steps in all of the documents listed above so that you have the completed piece parts ready for final assembly.

You may use these documents in any order except that the Pill Reminder Final Assembly Instructions must be the last set of instructions performed. *The suggested order of assembly is to follow the order in which the documents are listed above.*

You should read and review all of the above documents before ordering parts or otherwise investing time or money into building the Pill Reminder. It is your responsibility to make sure that you have the tools, skills and capabilities to undertake this project. Shrimpware LLC cannot provide technical support in the event that you get stuck and cannot complete any of these instructions without help. *By proceeding to order parts and/or to perform any of the assembly instructions in any of these documents, you agree to assume all responsibility for the ensuring that you are capable of completing the project without help or assistance from us*.

The following sections provide additional detail about each of these documents.

2.   Pill Reminder Arduino IDE Installation.

The Pill Reminder is powered by software that runs on an Arduino Uno microcontroller board. The software for the Pill Reminder is supplied in this release package under the "Software" folder. In order to get the software on to your Arduino Uno board, you must perform the following steps on your computer:

- Install the Arduino Integrated Development Environment (IDE) on your computer (Windows, Macintosh and Linux computers are supported). The Arduino IDE is downloadable free over the Internet.

- Install additional libraries into the Arduino IDE. The Arduino IDE comes with libraries, some of which are used by the Pill Reminder software. The Pill Reminder software requires additional libraries to be installed into your Arduino IDE. These additional libraries are in the "Software | Libraries" subfolder of this release package and detailed instructions for installing the libraries are included in this document.

- Load the Pill Reminder software into the Arduino IDE. This software is contained in the "Software | Pill_Reminder_101" folder of this release package. The Pill Reminder software is supplied to you as source code and (given that you have the skills and knowledge to do so), you are free to modify this software for your own, non-commercial use, in accordance with the license information contained in the "Terms_of_Use_License_and_Disclaimer" document that is in the top folder of this release package.

- Compile and verify the software and the correct software installation.

- Compile and upload the software to your Arduino Uno board. Once the software is uploaded to your Arduino Uno board, it is stored there in non-volatile flash memory and will remain on the board until it is overwritten.

The "Pill reminder Arduino IDE Installation" document provides step by step instructions to accomplish all of these tasks.

3.   Pill Reminder Shield Board Assembly Instructions.

You must assemble the "shield board", which is a printed circuit board containing the electronics to connect various Pill Reminder components (LCD display, LEDs, PIR sensor and RTC module) to the Arduino Uno so that they may be controlled by the Pill Reminder software. The shield board is purchased off of the Parts List as a bare, 2 sided, printed circuit board. The Parts List contains ordering information for all of the parts that must be assembled onto the bare shield board. All parts are through-hole and require only a simple electronic assembly tools:

- Fine tip soldering iron and solder.
- Long nose pliers.
- Diagonal cutter.
- Wire stripper.

You should also have on hand a roll of electrical tape, insulated wire, and solder removal capability (e.g. solder wick, solder pullet). Some sort of "third hand" board holder and a magnifier may be helpful to have on hand as well. Further details of the tools and material required, as well as annotated step by step assembly instructions can be found in this document.

4.   Pill Reminder Case Assembly Guide.

You must assemble the Pill Reminder enclosure out of 2D parts that are cut from 3 mm wood or plastic stock. The parts list contains a link to order a kit of these parts, pre-cut for you, so that you only have to assemble them as instructed by this document. Alternatively, you can use the CAD files supplied in this release package to cut your own parts using a laser cutter. Further information about cutting your own parts is contained in this document. Regardless of how you obtain the enclosure parts, this document provides annotated step by step instructions for assembling them into the enclosure. Lots of photos are included and instructions are provided for making the enclosure out of wood as well as out of plastic. The material that you use is your choice and is discussed further in this document.

Assembly of the Pill Reminder enclosure requires a clean work area, wood glue (for wood) or solvent (for plastic) and bench clamps, rubber bands or other tools for holding parts together during assembly. It is also useful to have some small files on hand in order to make fine adjustments to the material during assembly.

5.   Pill Reminder Final Assembly Instructions.

This document contains annotated step by step instructions for completing and testing the Pill Reminder with the following, assembled parts on hand:

- Arduino Uno microcontroller board with the Pill Reminder software loaded on to it.
- Assembled shield board.
- Assembled enclosure.
- LED lamps, LCD module with cabling, PIR module with cabling, and RTC module with cabling.

You will also need the assembly hardware listed in the Parts List, which includes both metal and nylon screws, nuts, threaded standoffs, and insulated hookup wire. You will need an assortment of screw drivers, wire cutters and strippers, a soldering iron and solder (or crimp connectors and a crimping tool), pliers, and possibly some small files in order to complete the step by step instructions in this document.

We hope that you enjoy building and using the Pill Reminder.